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# CURRENTS

A quarterly report on developer trends in the cloud

# Introduction

Trends in the developer community move quickly. As a developer-focused company, it's vital for us to keep up with the technologies and tools that developers and their teams are interested in so we can help them achieve their goals.

Currents is a quarterly report on developer cloud trends that we created to share our knowledge with the broader community. For the third edition, we surveyed nearly 6,000 respondents from around the world about themselves, the tools they use, and the challenges they face.

## Key findings include:

- **Developers in the United States are strongly opposed to the repeal of net neutrality** with 83 percent saying they believe the FCC made the wrong decision. This is in line with the 83 percent of U.S. voters who said the same in a December poll, highlighting the overwhelming public opposition to the repeal.

- **A majority (71 percent) of developers responded that their day-to-day work was not impacted by Spectre/Meltdown**, despite the wide reach and intense media coverage of the vulnerabilities.

- **Though the General Data Protection Regulation (GDPR) is slated to go into effect at the end of May, developers and companies are still confused about whom the regulation will affect.** A third (34 percent) of all respondents are unsure if their company is preparing for the legislation. This holds true regardless of company size.

- **As companies grow in size, they're more likely to be using continuous integration (CI), but there's still room for growth.** Today, roughly two-thirds (68 percent) of companies with 1,000+ employees use CI. Of all industries, financial services companies are most likely to be using CI, at 72 percent, while nonprofits are least likely, at 39 percent.

# 1 —

# Tools & Technology

We asked about continuous integration (CI) and continuous delivery (CD) as well as artificial intelligence (AI) and machine learning (ML) technologies.

**Continuous delivery is used less than continuous integration across all company sizes.** Only 45 percent of respondents reported using CD compared to 58 percent using CI.

Among those who are not yet using a CI or CD solution, 43 percent indicated that they plan to use CI/CD while 26 percent do not believe CI/CD would be useful for their workflow.

Of those who use CI/CD, 52 percent reported that the largest benefit is faster code review and deployment. Meanwhile, 22 percent reported that using CI/CD with a versioned repository helps their team work better together.

We also found that Google TensorFlow is the most popular AI/ML platform among those surveyed, with the most popularity among educators and students.
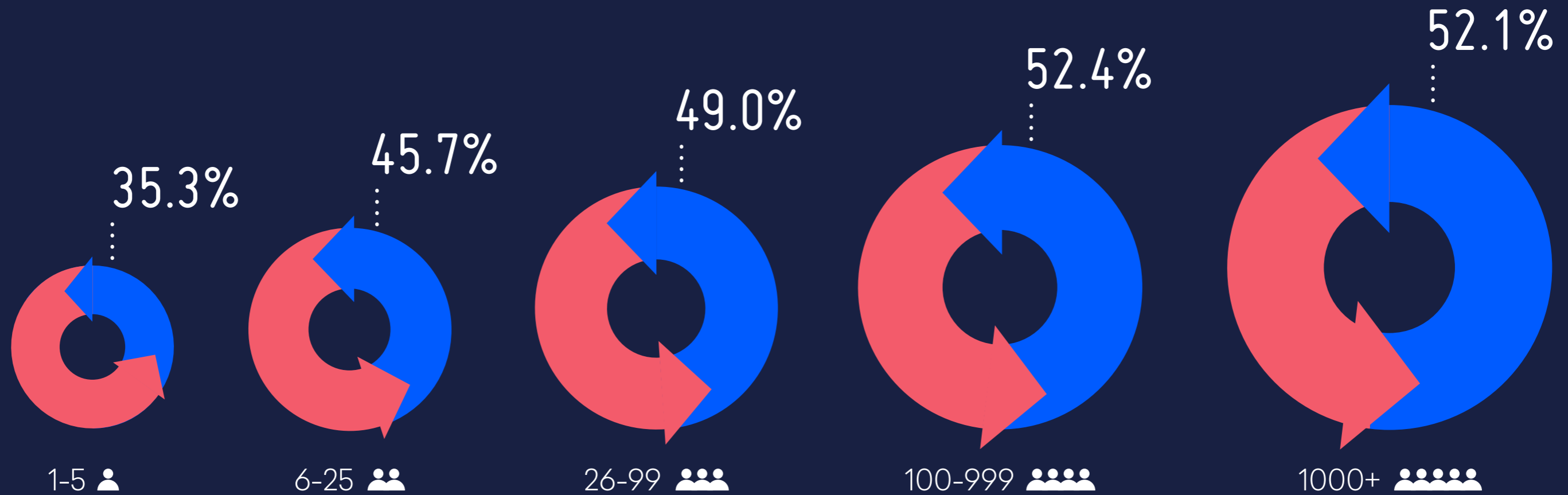
## Are you using a continuous integration process?

Segmented by Company Size

■ Yes  ■ No

Segmented by Company Size    ■ Yes    ■ No

35.3%    45.7%    49.0%    52.4%    52.1%

1-5 👤    6-25 👥    26-99 👥    100-999 👥    1000+ 👥
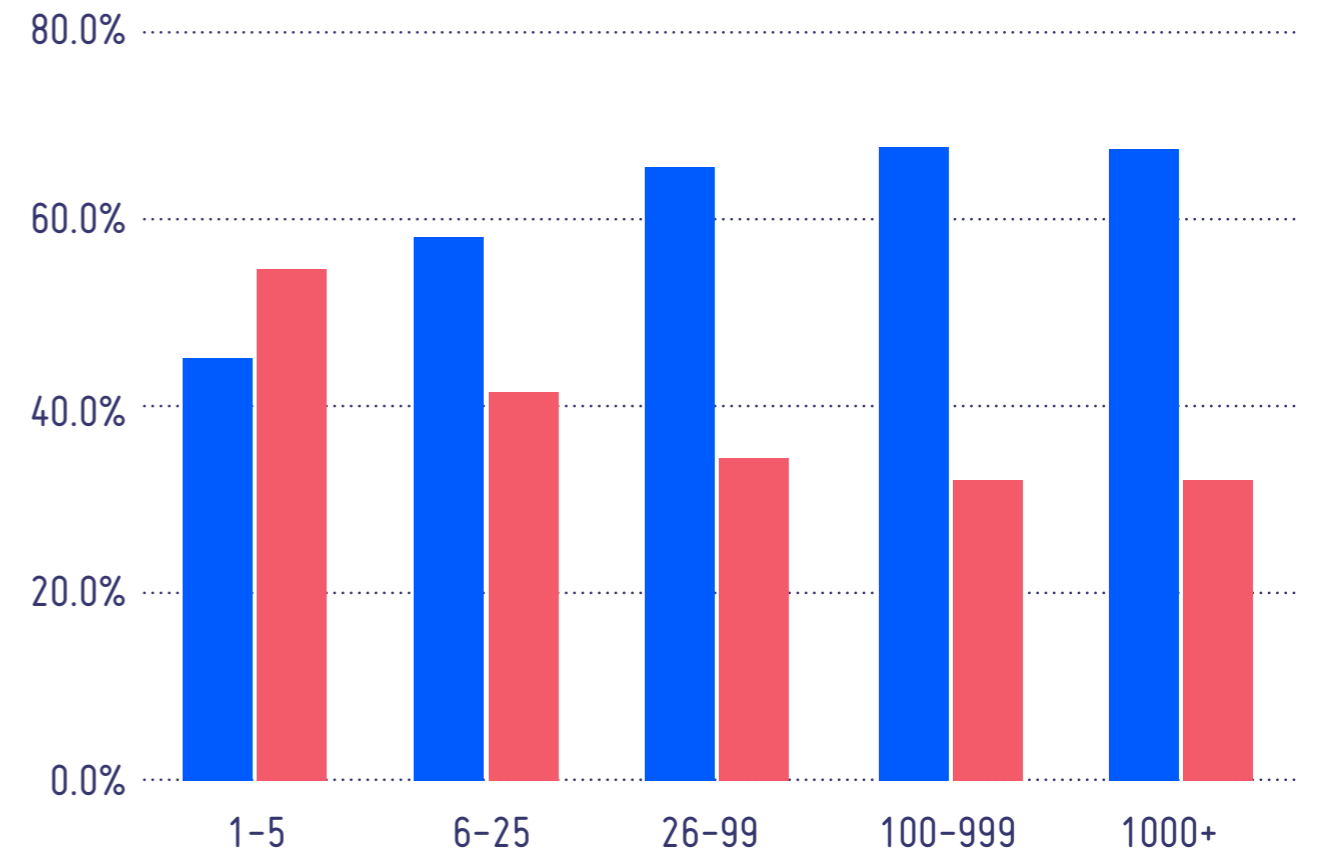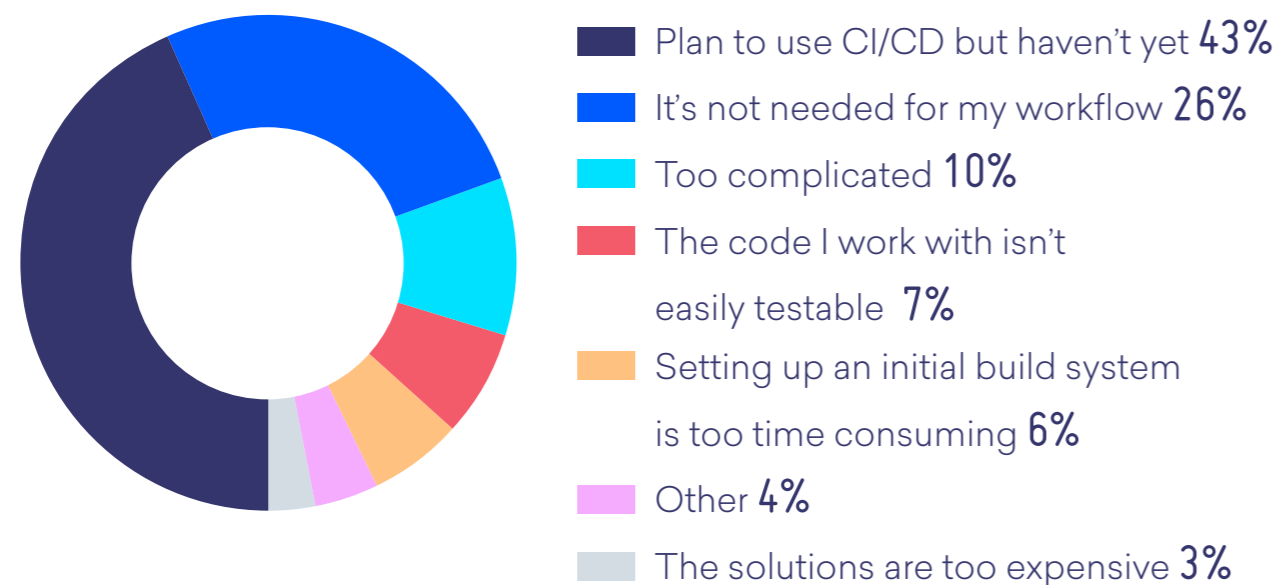
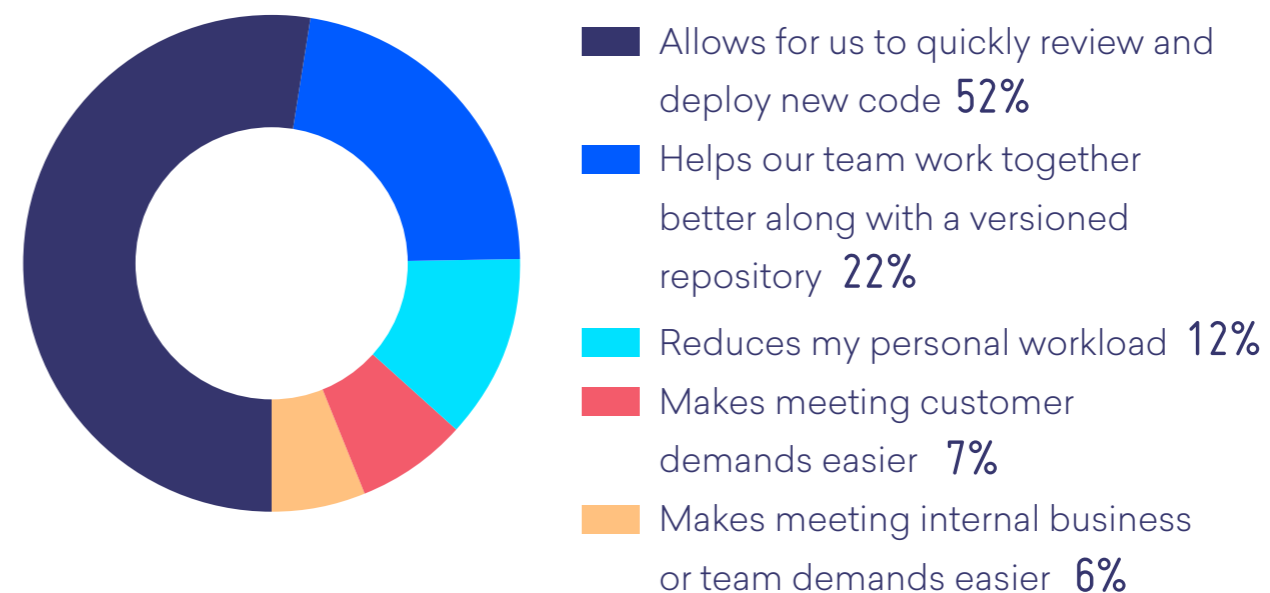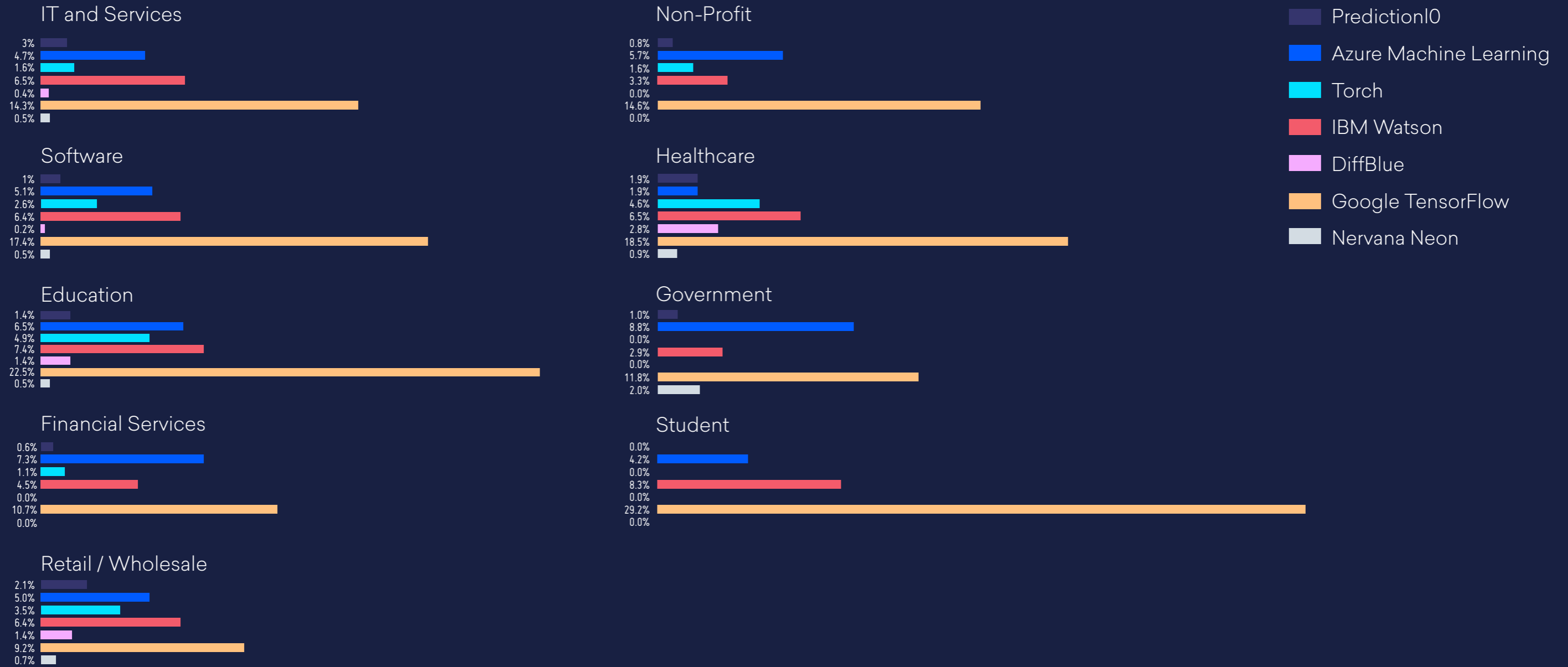Are you using a continuous delivery process?

For organizations with over 100 employees, CI and CD use is quickly becoming standard practice.

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# If you are not using a CI or CD solution, why not?



- **Plan to use CI/CD but haven't yet 43%**
- **It's not needed for my workflow 26%**
- **Too complicated 10%**
- **The code I work with isn't easily testable 7%**
- **Setting up an initial build system is too time consuming 6%**
- **Other 4%**
- **The solutions are too expensive 3%**

# What do you think is the most beneficial aspect of a CI or CD solution?



- **Allows for us to quickly review and deploy new code 52%**
- **Helps our team work together better along with a versioned repository 22%**
- **Reduces my personal workload 12%**
- **Makes meeting customer demands easier 7%**
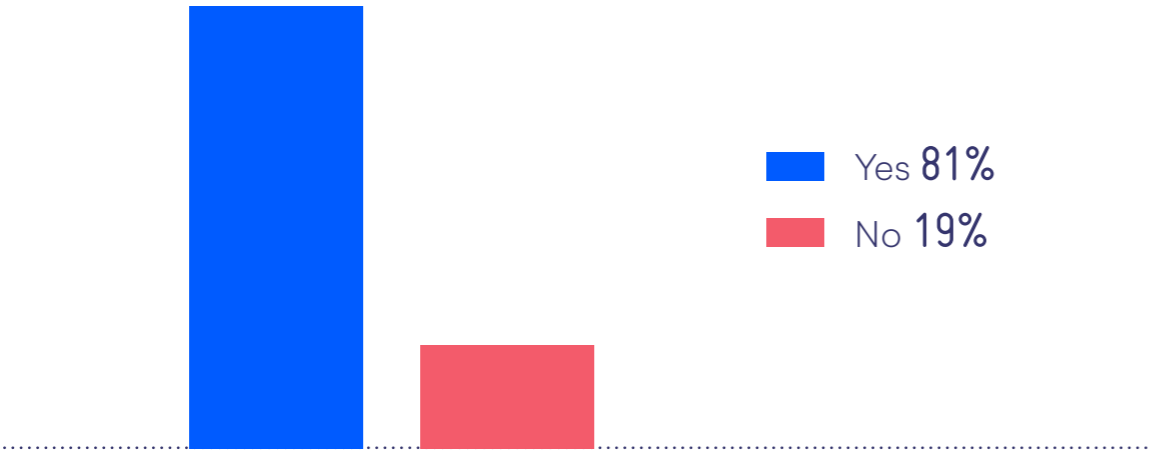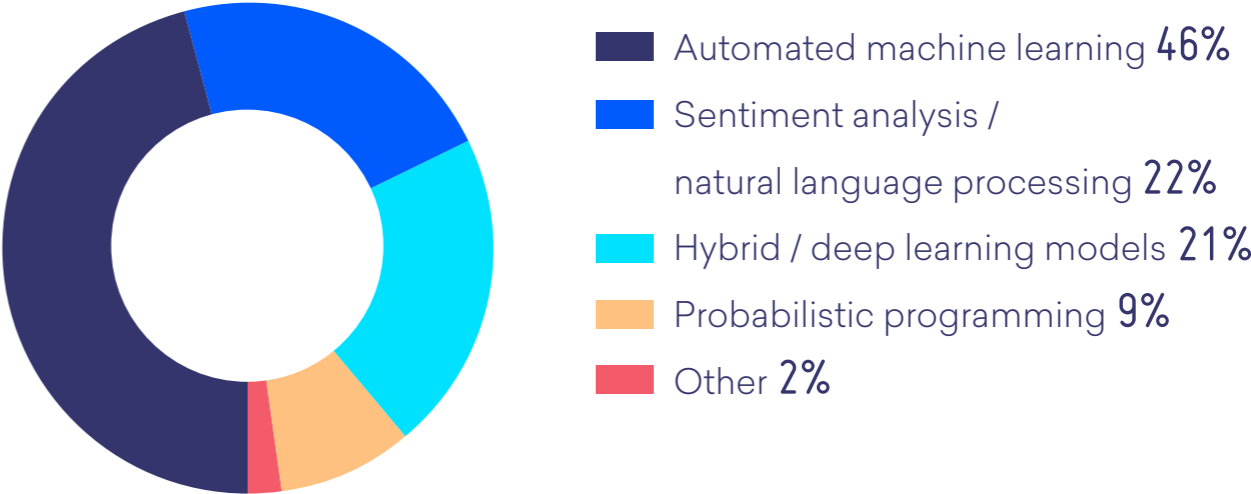- **Makes meeting internal business or team demands easier 6%**

## Have you used any of the following AI solutions in your development work?

74 percent of developers are not using AI or ML tools in their workflow, but most want to learn more about them.

**Legend:**
- Prediction10
- Azure Machine Learning
- Torch
- IBM Watson
- DiffBlue
- Google TensorFlow
- Nervana Neon

### IT and Services
- 3%
- 4.7%
- 1.6%
- 6.5%
- 0.4%
- 14.3%
- 0.5%

### Software
- 1%
- 5.1%
- 2.6%
- 6.4%
- 0.2%
- 17.4%
- 0.5%

### Education
- 1.4%
- 6.5%
- 4.9%
- 7.4%
- 1.4%
- 22.5%
- 0.5%

### Financial Services
- 0.6%
- 7.3%
- 1.1%
- 4.5%
- 0.0%
- 10.7%
- 0.0%

### Retail / Wholesale
- 2.1%
- 5.0%
- 3.5%
- 6.4%
- 1.4%
- 9.2%
- 0.7%

### Non-Profit
- 0.8%
- 5.7%
- 1.6%
- 3.3%
- 0.0%
- 14.6%
- 0.0%

### Healthcare
- 1.9%
- 1.9%
- 4.6%
- 6.5%
- 2.8%
- 18.5%
- 0.9%

### Government
- 1.0%
- 8.8%
- 0.0%
- 2.9%
- 0.0%
- 11.8%
- 2.0%

### Student
- 0.0%
- 4.2%
- 0.0%
- 8.3%
- 0.0%
- 29.2%
- 0.0%

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# Are you interested in learning about / trying out AI / ML technologies this year?

Yes 81%

No 19%

# What AI and machine learning advancements are you most excited about in 2018?



- Automated machine learning **46%**
- Sentiment analysis / natural language processing **22%**
- Hybrid / deep learning models **21%**
- Probabilistic programming **9%**
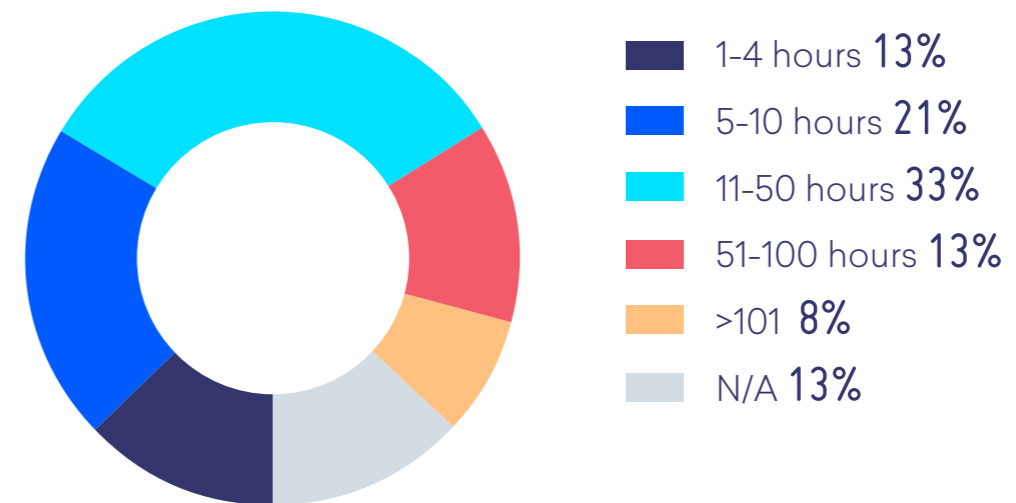- Other **2%**

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# 2 —

# Current Events

We asked developers about the impact of new changes in law that are likely to affect the tech industry. The GDPR (General Data Protection Regulation) in the European Union will strengthen the protections around personal data for EU citizens, while in the United States, the FCC's changes to net neutrality represent a major divergence from previous regulations.

We found that our users worldwide are strongly opposed to the recent net neutrality changes made by the FCC (61 percent), especially those in the United States (83 percent).

Among our global audience, only 29 percent of developers are currently engaged in work related to the GDPR. At 70 percent, the United Kingdom has the largest share of developers currently engaged in GDPR work.

## How much time do you expect to spend preparing for GDPR this year?



- 1-4 hours **13%**
- 5-10 hours **21%**
- 11-50 hours **33%**
- 51-100 hours **13%**
- >101 **8%**
- N/A **13%**

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**29%** Yes ...................

.................. **37%** No

**34%** Not sure .................
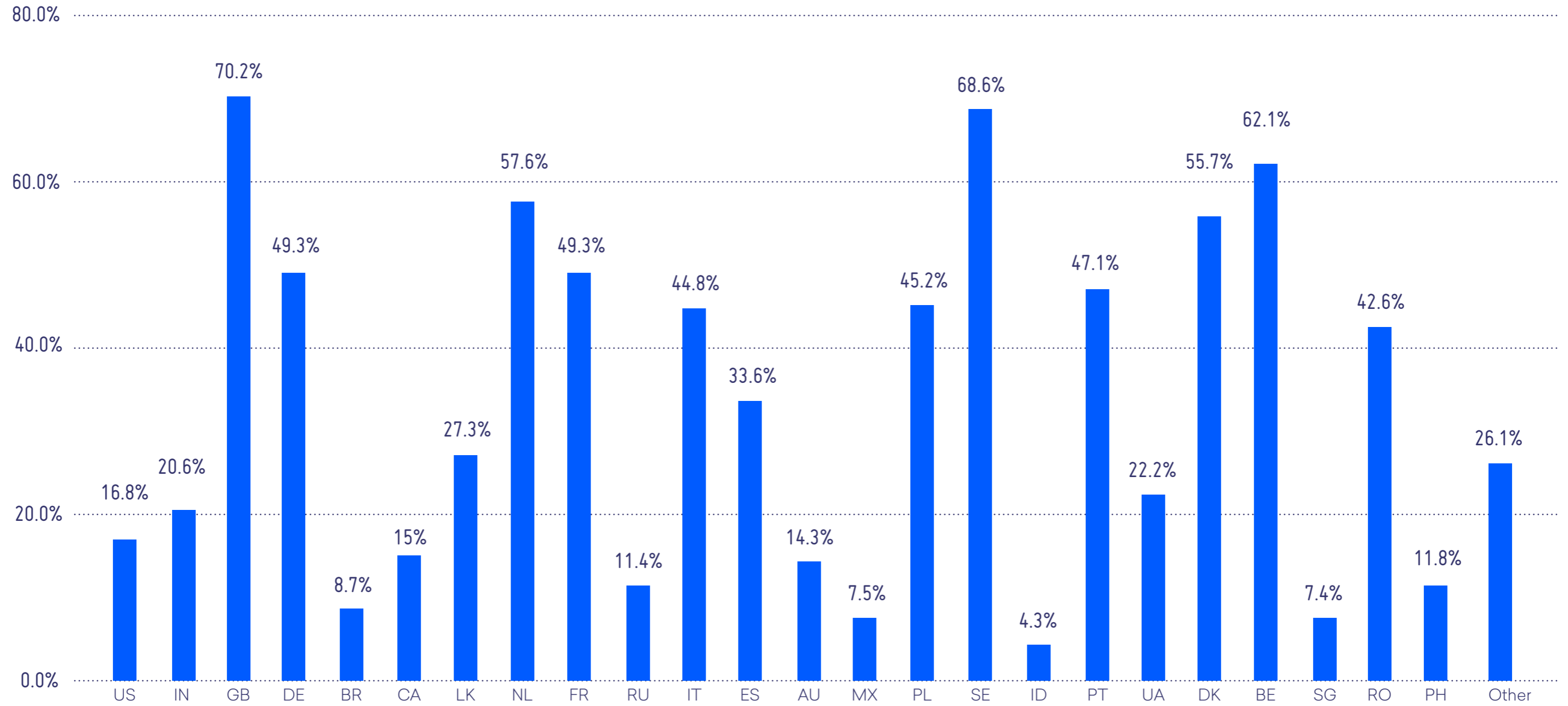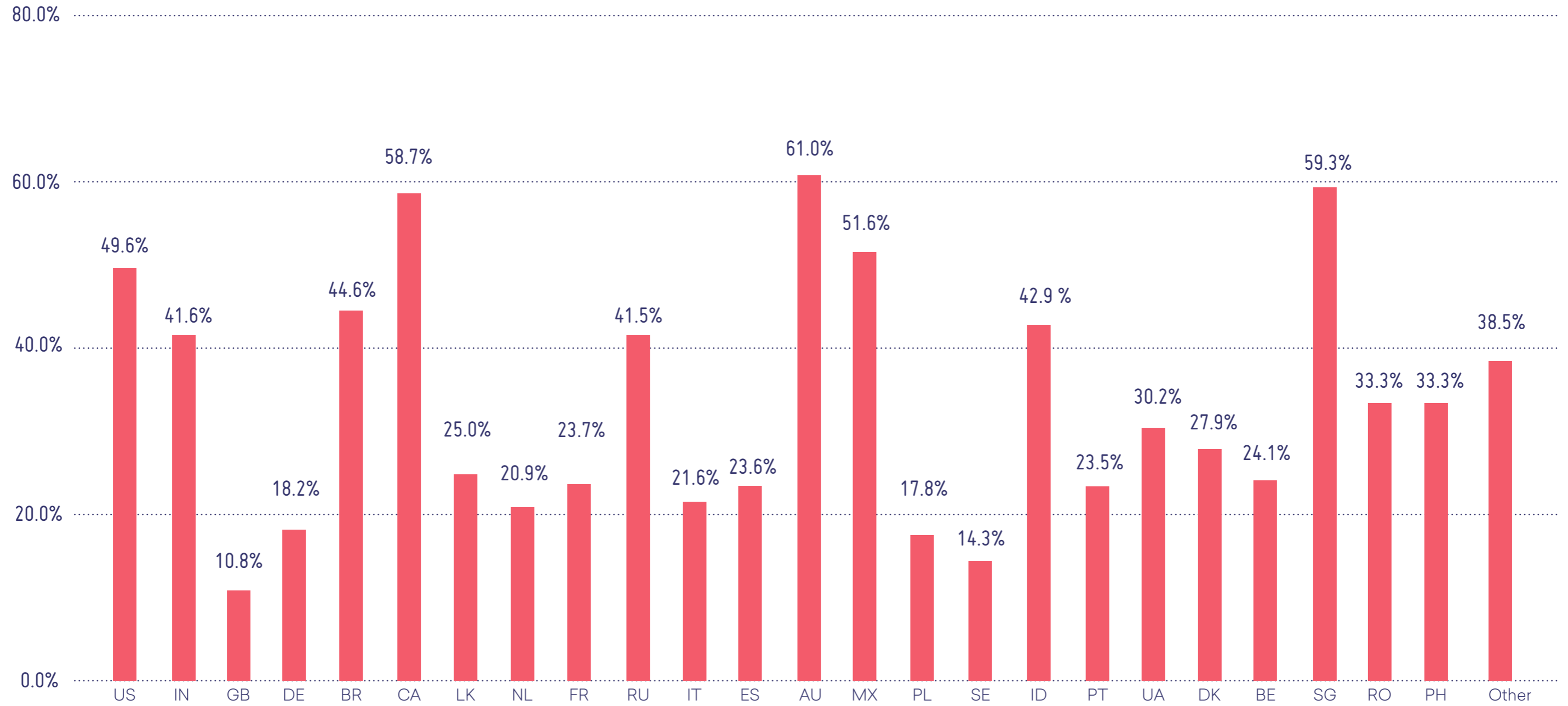
Is your team currently preparing
for GDPR legislation?

Worldwide, 29 percent of developers are taking steps to prepare for the GDPR. While EU developers are most likely to be involved in this work, many outside of the European Union are engaged in activity to ensure GDPR compliance for their EU customers and clients.
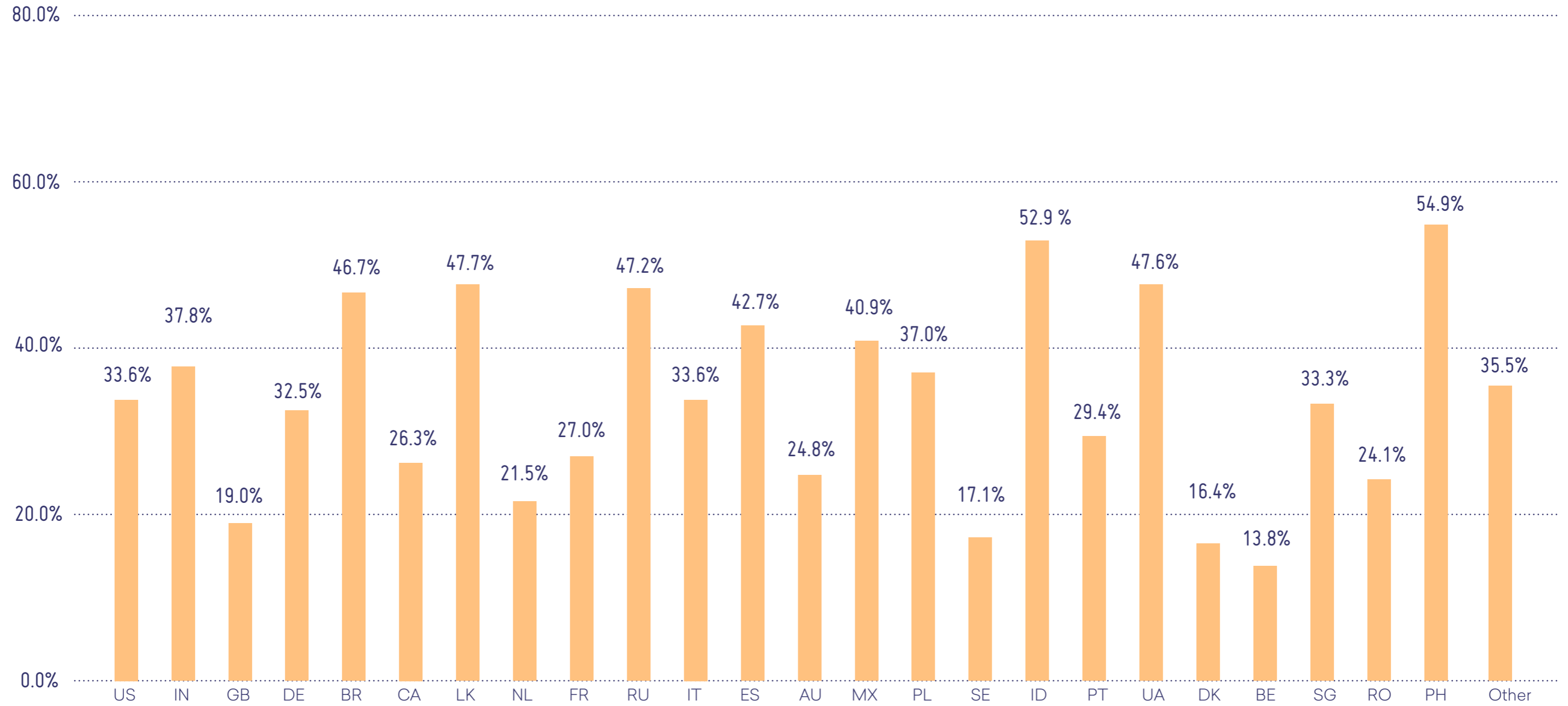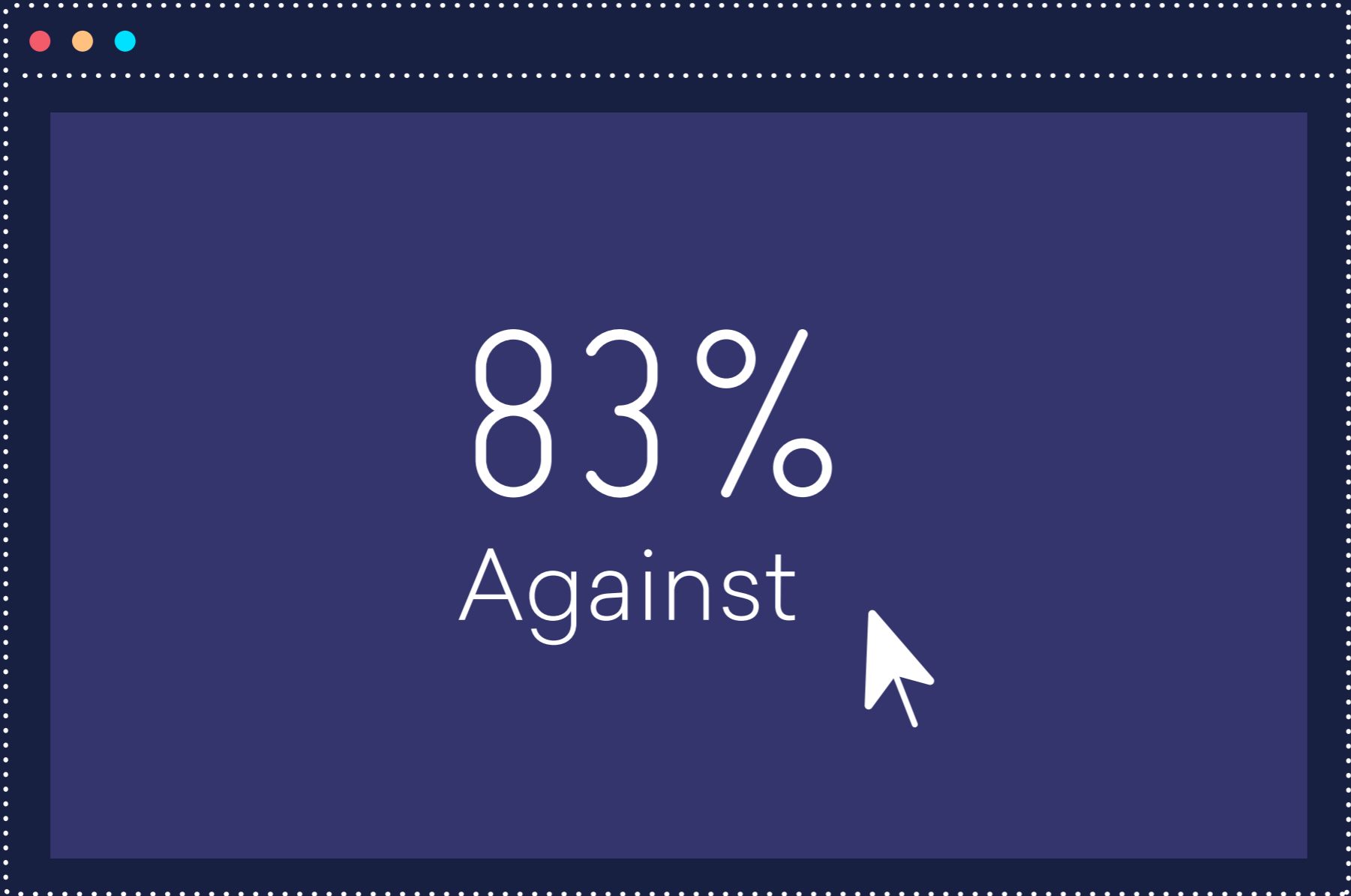
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**Yes - by country**

| Country | Percentage |
|---------|-----------|
| US | 16.8% |
| IN | 20.6% |
| GB | 70.2% |
| DE | 49.3% |
| BR | 8.7% |
| CA | 15% |
| LK | 27.3% |
| NL | 57.6% |
| FR | 49.3% |
| RU | 11.4% |
| IT | 44.8% |
| ES | 33.6% |
| AU | 14.3% |
| MX | 7.5% |
| PL | 45.2% |
| SE | 68.6% |
| ID | 4.3% |
| PT | 47.1% |
| UA | 22.2% |
| DK | 55.7% |
| BE | 62.1% |
| SG | 7.4% |
| RO | 42.6% |
| PH | 11.8% |
| Other | 26.1% |

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**No - by country**

| Country | Percentage |
|---------|-----------|
| US | 49.6% |
| IN | 41.6% |
| GB | 10.8% |
| DE | 18.2% |
| BR | 44.6% |
| CA | 58.7% |
| LK | 25.0% |
| NL | 20.9% |
| FR | 23.7% |
| RU | 41.5% |
| IT | 21.6% |
| ES | 23.6% |
| AU | 61.0% |
| MX | 51.6% |
| PL | 17.8% |
| SE | 14.3% |
| ID | 42.9 % |
| PT | 23.5% |
| UA | 30.2% |
| DK | 27.9% |
| BE | 24.1% |
| SG | 59.3% |
| RO | 33.3% |
| PH | 33.3% |
| Other | 38.5% |

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Not sure - by country

| Country | Percentage |
|---------|------------|
| US | 33.6% |
| IN | 37.8% |
| GB | 19.0% |
| DE | 32.5% |
| BR | 46.7% |
| CA | 26.3% |
| LK | 47.7% |
| NL | 21.5% |
| FR | 27.0% |
| RU | 47.2% |
| IT | 33.6% |
| ES | 42.7% |
| AU | 24.8% |
| MX | 40.9% |
| PL | 37.0% |
| SE | 17.1% |
| ID | 52.9 % |
| PT | 29.4% |
| UA | 47.6% |
| DK | 16.4% |
| BE | 13.8% |
| SG | 33.3% |
| RO | 24.1% |
| PH | 54.9% |
| Other | 35.5% |

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**83%**
Against

**9%**
Not sure

**3%** Don't care

**3%** For

Are you for or against the repeal of the FCC's rules governing net neutrality (US Respondents) ?

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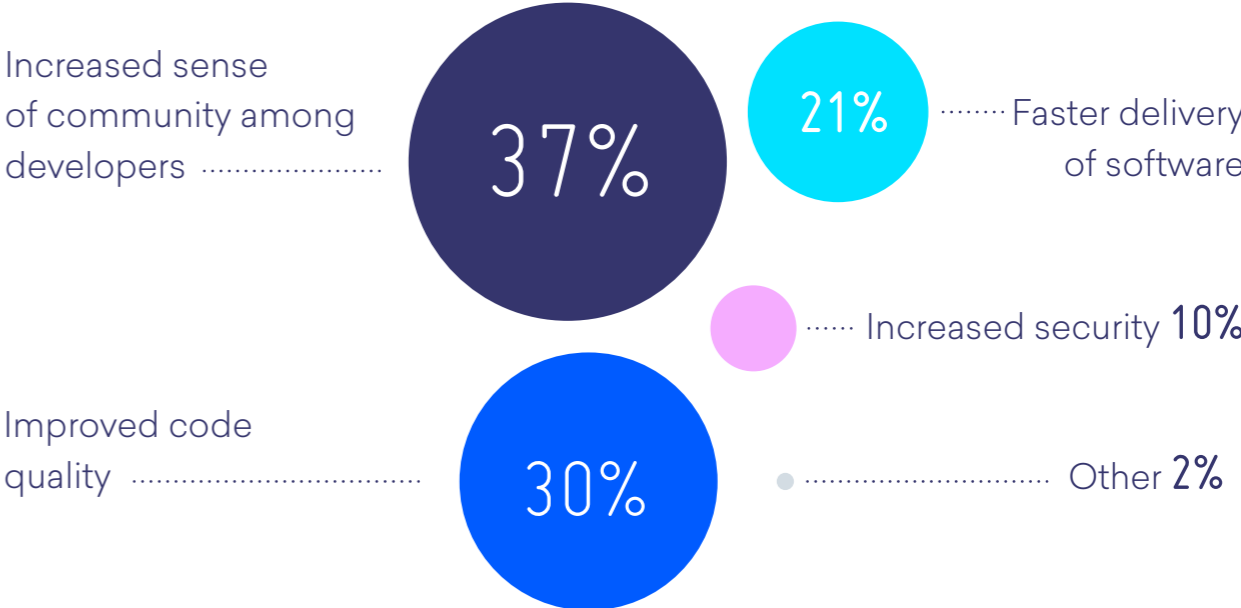# Do you expect the repeal of net neutrality in the United States to affect your work ?

- **Yes** 46%
- **No** 54%
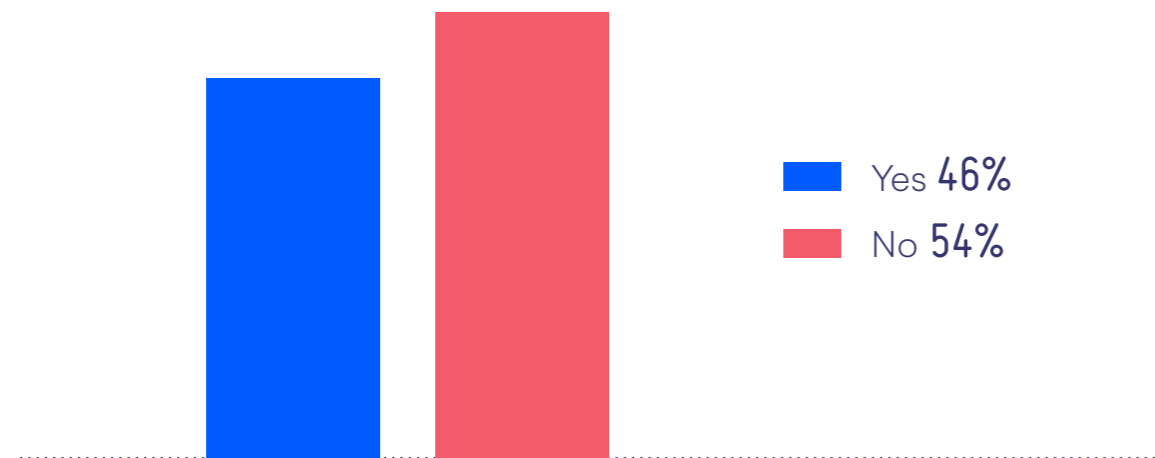
# If yes, how will the net neutrality repeal affect you?



- Increase technical and business expenses **34%**
- Inhibit ability to compete with established players **32%**
- Slow development and deployment processes **23%**
- Remove restrictions and barriers from company's work **6%**
- Decrease technical and business expenses **3%**
- Other **2%**
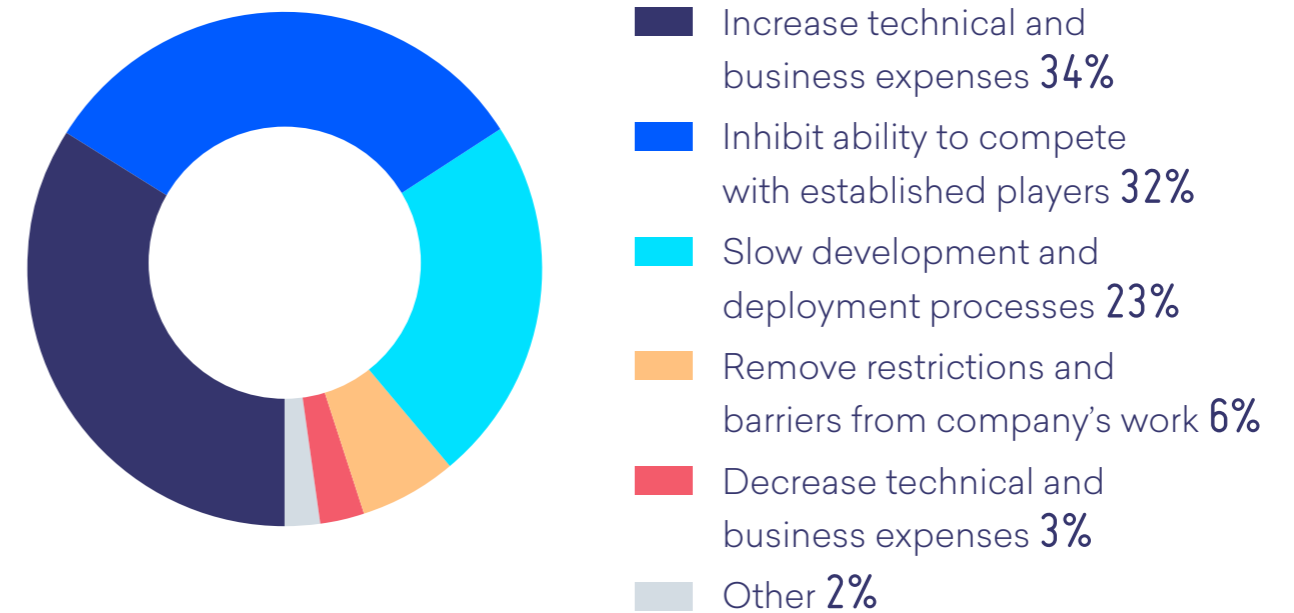
## Did you take any actions regarding the repeal of net neutrality?



- I did not take any actions **37%**
- Signed a petition **30%**
- Discussed with friends **23%**
- Contacted my legislator **7%**
- Attended a protest **2%**
- Other **1%**
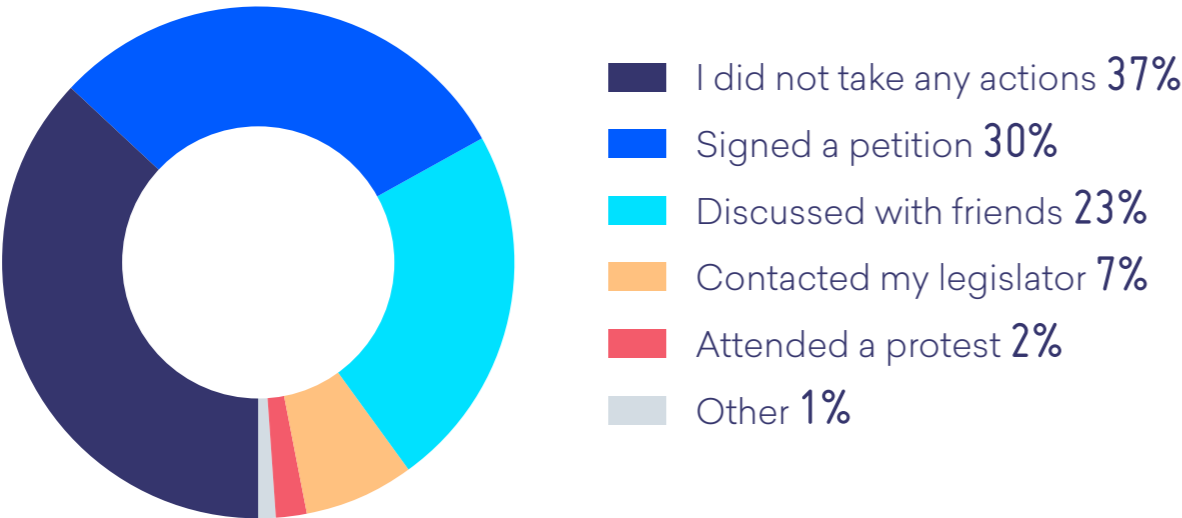
## What is the biggest advantage of open source?



Increased sense of community among developers ········· **37%**

Faster delivery of software ········· **21%**

Increased security **10%**

Improved code quality ········· **30%**

Other **2%**

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# What are the two biggest roadblocks to open source software adoption today?

**50%** Technology vendors prefer to lock users into their own proprietary systems

**46%** Lack of professional support

**35%** Security concerns with open source software

**28%** I have not experienced any roadblocks to using open source at my workplace

**23%** The cost associated with open sourcing or replacing legacy software

**18%** The developers I work with prefer to work with closed software
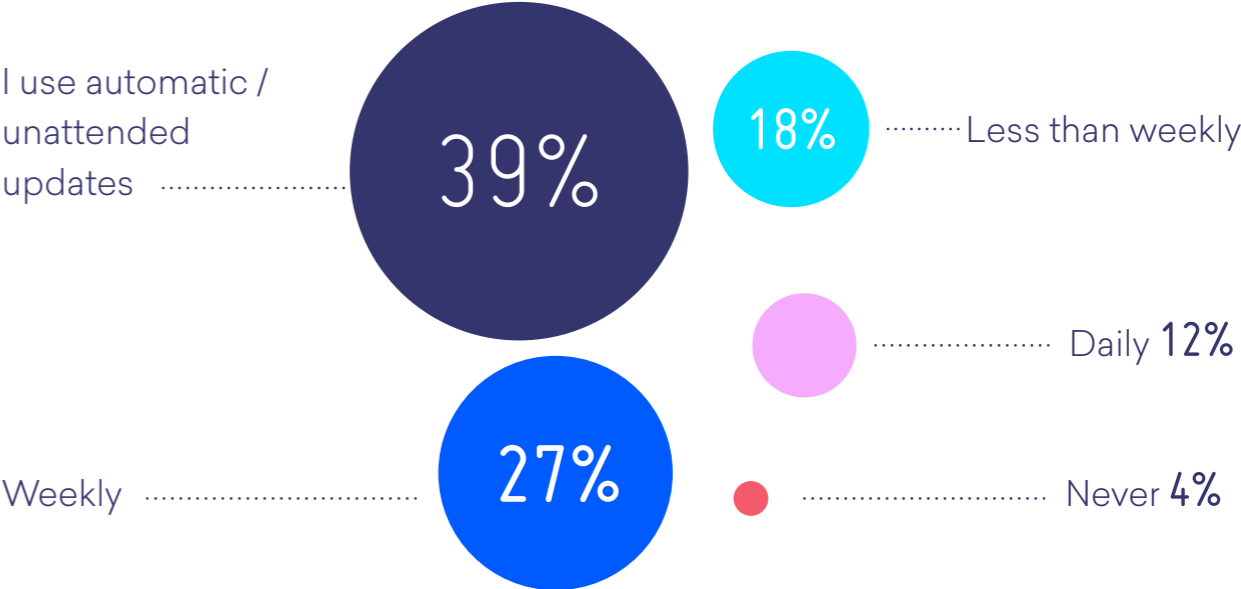
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**29%** Yes

**71%** No

Were you involved in your company's response / was your work impacted by Spectre / Meltdown vulnerabilities?

The Spectre and Meltdown vulnerabilities have had a major impact on the industry. 71 percent of respondents worldwide reported that they have been directly involved with their organization's response.
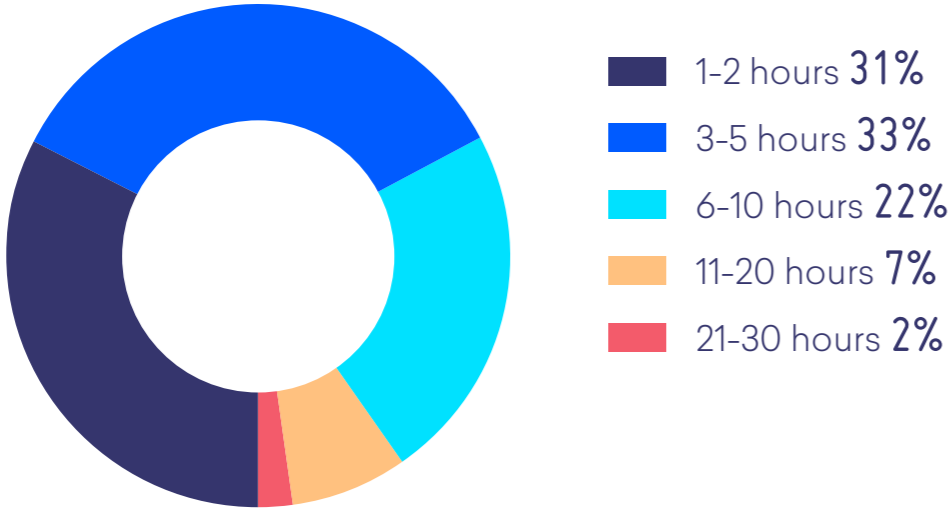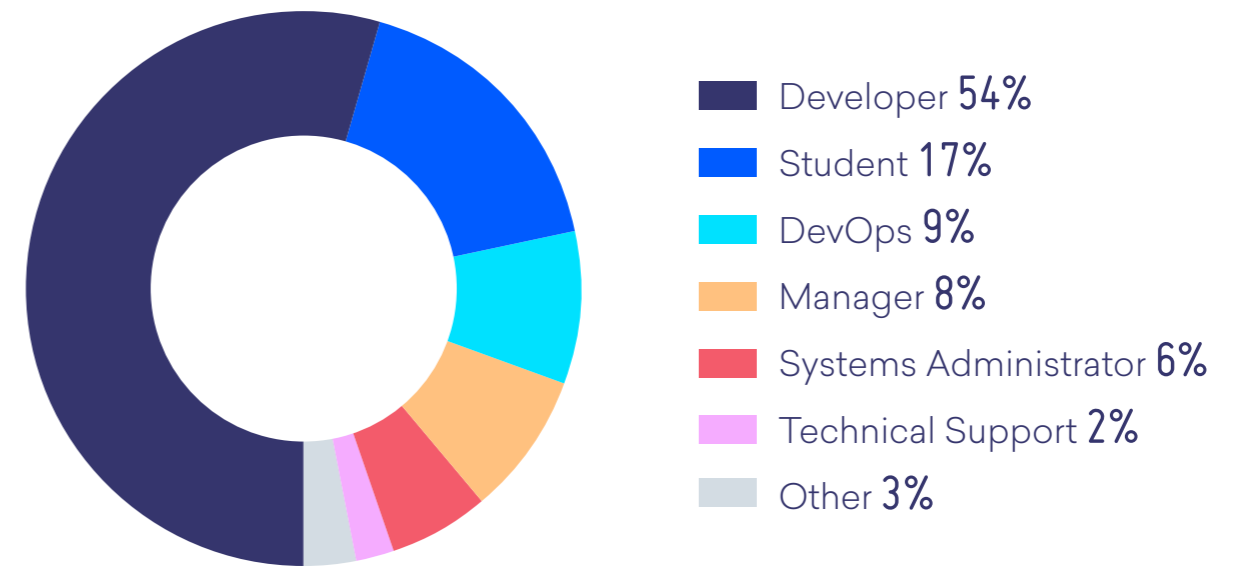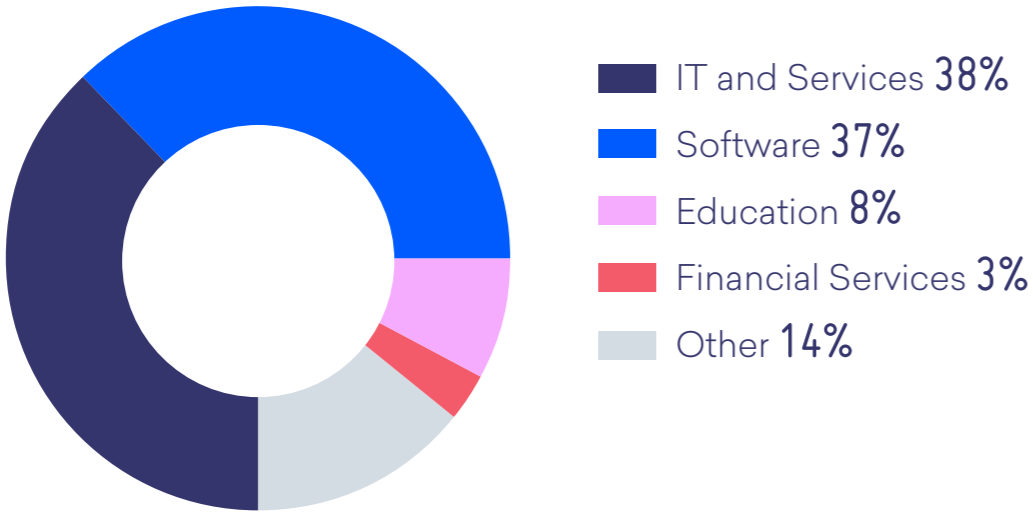
# 3 —

# Demographics

Of the 5,993 survey respondents, 54 percent self-identified as developers and 17 percent as students. 38 percent indicated they worked in IT & Services with 37 percent in the software industry. Our respondents were 90 percent male, 9 percent female, and 1 percent non-binary/other. 83 percent of respondents were under 35 years old. Only one respondent reported being 65 years or older.
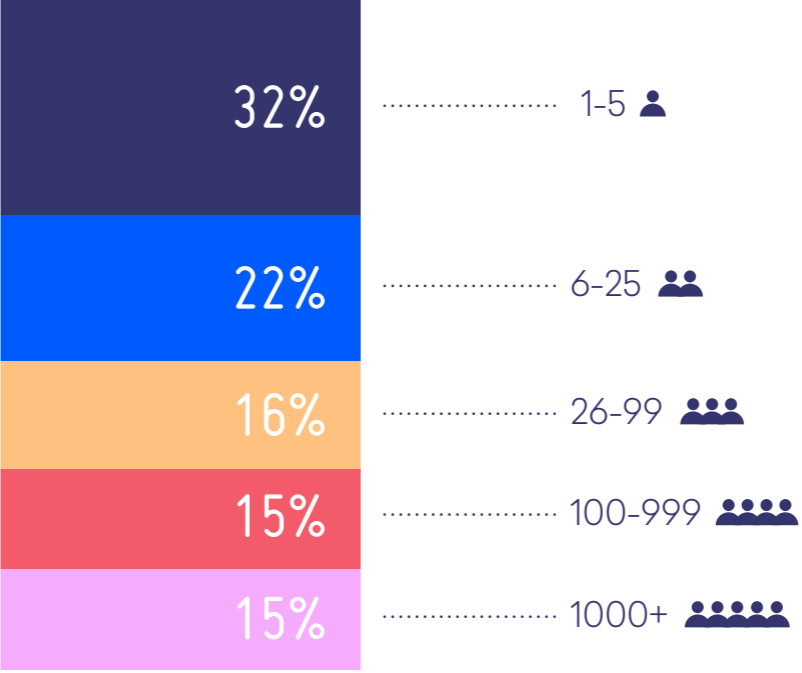
## I consider myself a…

- Developer **54%**
- Student **17%**
- DevOps **9%**
- Manager **8%**
- Systems Administrator **6%**
- Technical Support **2%**
- Other **3%**

# What industry do you work in?

- IT and Services 38%
- Software 37%
- Education 8%
- Financial Services 3%
- Other 14%

# What size is your company (number of employees)?

| | |
|---|---|
| 32% | 1-5 |
| 22% | 6-25 |
| 16% | 26-99 |
| 15% | 100-999 |
| 15% | 1000+ |

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# What is your age?



- 18 - 24 **39%**
- 25 - 34 **44%**
- 35 - 44 **14%**
- 45 - 54 **3%**
- 55 - 64 **1%**



- Female **9%**
- Male **90%**
- Non-Binary / Other **1%**

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